

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Previously Presented) A method for producing a metal ion-specific capacity affinity sensor suitable for determining the presence of a certain heavy metal ion of interest in a contacting solution by capacitance measurement, comprising the steps of:

- a) providing a piece of a noble metal having a surface;
- b) providing a first self-assembling monolayer-forming molecule comprising a coupling group;
- c) contacting said noble metal piece in step a) with the first self-assembling monolayer-forming molecule in step b), thereby obtaining a first self-assembling monolayer on said surface of said noble metal piece;
- d) contacting said first self-assembling monolayer on said noble metal piece with a molecule specifically binding said heavy metal ion, thereby coupling said molecule to said first self-assembling monolayer; and
- e) contacting the piece obtained in step d) with a second self-assembling monolayer-forming molecule, thereby obtaining a noble metal surface that is at least 90% covered with a self-assembling monolayer,  
wherein the coupling reaction in step d) is carried out in presence of polyethylene-glycol-di-glycidyl-ether.

2-4. (Cancelled)

5. (Previously Presented) A method according to claim 1, characterized in that said second self-assembling monolayer-forming molecule is a thiol comprising 3-25 carbon atoms in a straight saturated chain.